

**Notice of Allowability**

Application No.

09/389,720

Examiner

James M. Mitchell

Applicant(s)

DICKEY, BRENTON L.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/15/2005.
2. ☒ The allowed claim(s) is/are 20-24, 29, 30 and 59-87.
3. ☒ The drawings filed on 03 September 1999 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 4/8/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

*Carl Whitehead, Jr.*  
**CARL WHITEHEAD, JR.**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**

### **DETAILED ACTION**

This office action is in response to the amendment filed February 15, 2005.

#### ***Information Disclosure Statement***

The Japanese reference (11-180291A) failed to be signed in examiner's previous acknowledgement of the information disclosure statement (IDS) filed April 8, 2003. The examiner has considered the reference.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John King on April 28, 2005.

The application has been amended as follows to better define the novelty of the pending application:

#### **CLAIMS**

In claim 20, line 8 after "carrier" insert - - comprising a plurality of crossbars with adjacent crossbars having at least one of said substrate units therebetween".

In claim 62, line 11 after "connected to a" insert - - first - -.

In claim 81, line 9 after "carrier" insert - - comprising a plurality of crossbars with adjacent crossbars having at least one of said substrate units therebetween".

***Allowable Subject Matter***

Claims 20-24,29,30,59-87 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious a tape comprising a plurality of substrate units with each being flanked by slots which are openings, with cavities formed in each unit to receive wires from a respective semiconductor with **a temporary carrier** connected to a first surface (opposite the surface the chip is attached to) of the flexible tape wherein the carrier comprises a plurality of crossbars, with adjacent cross bars having at least one substrate units therebetween.

Nor does the prior art disclose or make obvious a film includes side rails with projecting portions and a **carrier that supports the substrate/film** (on a surface opposite the surface the chip is attached to) with bond pad that chips are electrically connected to, with the carrier comprising first and second **side bar including spaced teeth** and aligned with side rails projecting from the film including all the limitation of the independent claim.

In contrast, while adding reinforcing material to a substrate /film is common in the art as exemplified by for example Mchugh (U.S. 5, 715,143) and Gutentag (U.S.

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6,357,594), the prior art shows the carrier/reinforcing **material formed on the same surface** as the chip, as well as the teeth being formed on a film with no bond pads.

### ***Response to Amendment***

In light of the applicant and examiner's amendment, the previous rejection has been overcome.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art discloses various uses of temporary carriers, and most notably Mchugh (U.S 5,715,143) discloses the use of a temporary carrier with crossbars and side rails, but the carrier is connected to the same surface as the chip in contrast to the claimed invention where the carrier is connected to a different surface than the chip.

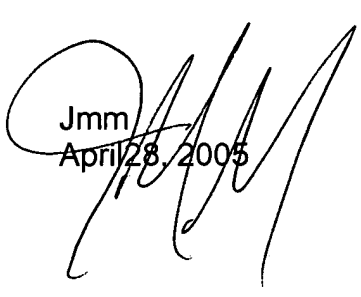
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jmm  
April 28, 2005

A large, stylized handwritten signature in black ink is written over the typed name and date. The signature appears to be a cursive representation of the initials 'Jmm'.